

ABSTRACT

A high strength and high toughness magnesium alloy, characterized in that it is a plastically worked product produced by a method comprising preparing a magnesium alloy cast product containing a atomic % of Zn, b atomic % of Y, a and b satisfying the following formulae (1) to (3), and the balance amount of Mg, subjecting the magnesium alloy cast product to a plastic working to form a preliminary plastically worked product, and
10 subjecting the preliminary plastically worked product to a heat treatment, and it has a hcp structure magnesium phase and a long period stacking structure phase at an ordinary temperature; (1) $0.5 \leq a < 5.0$ (2) $0.5 < b < 5.0$ (3) $2/3a - 5/6 \leq b$.